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ABSTRACT

A study examined the effect of topic-specific background knowledge on the general quality and local coherence of student writing. Ninety-seven tenth grade students were assigned two writing tasks on specific topics at two points during a semester. J. Langer's measure of topic-specific knowledge was administered prior to each writing task. Each student's writing sample was then scored on five separate measures: (1) overall quality, (2) coherence, (3) syntactic complexity, (4) audience, and (5) function. The data from the pretest and writing evaluations clearly suggested a strong and consistent relationship between topic-specific background knowledge and the quality of student writing. More interesting, however, was the evidence that different kinds of knowledge were predictive of success in different writing tasks. The analysis of interactions between background knowledge and audience and function categories suggested that when students had only fragmentary knowledge about a topic, they used tactics to avoid engaging in writing activities that required them to say more than they knew. The findings suggest that for many tasks, writers may need the same kinds of highly organized information that readers do, but for others they may also require an abundance of loosely related informational "bits" for use in their writing. This distinction may arise from differences inherent in each of the two activities: writers not only need to generate, present, and relate intricately linked ideas, but also need a large body of loosely associated information that can be used to elaborate, embellish, and enliven the presentation. (HTH)

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EFFECTS OF TOPIC KNOWLEDGE ON THE QUALITY AND COHERENCE OF INFORMATIONAL WRITING

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During the past ten years, an increasing amount of research has focussed on the nature of composing and the variables that affect the writing process. Stages of writing have been identified and described (Emig, 1971; Flower and Hayes, 1980), the functions of writing have been examined (Britton, 1975; Applebee, 1981), early writing development has been studied (Bissesx, 1980; Graves, 1975; Harste, 1982), and composing aloud techniques have been used to gain a window on the composing strategies used by more and less facile writers (Flower and Hayes, 1980; Perl, 1977). During this same period, research has also focussed on how personal history and specific life experiences affect the construction of meaning (Anderson, 1977; Goodman and Goodman, 1978; Harste, Burke, and Woodward, 1982; Rumelhart, 1977) and how the ways in which people organize their past experiences affects their responses to new experiences. Unfortunately, this vein of research has tended to be limited to relationships between background knowledge and

reading comprehension--while the effects of topic knowledge on written expression has tended to be ignored. While writing researchers have generally assumed that knowledge of a topic affects student writing, the ways in which that knowledge interacts with writing performance have remained unstudied. The study reported here focusses on just this question.

One of the issues to emerge from recent studies of writing in the secondary school (Applebee 1981, 1983) concerns the amount and nature of the informational writing students do. From his case study findings, Applebee (1983) suggests that more than half the writing students do is completed in content classes; even in English, assignments emphasize informational writing. At the same time, most teachers orchestrate the use of informational writing in somewhat restricted ways, primarily to test how well students have learned the material being studied. In this context, their responses to student work tend to focus on conventions of writing or accuracy of informaton with little attention to the source of the problems the student may be having in dealing with the particular topic. There is little consideration of the amount of knowledge a student already has about the topic, or of the ways in which the level of understanding may interact with performance on the writing task.

Since informational writing (or any writing for that matter) is a function of the knowledge a writer has available in developing the piece, writing as a "skill" is too intertwined with knowledge of the subject matter itself to isolate the two without considering how one affects the other. Because topical knowledge so directly helps shape a paper, the teacher's understanding of what students know about a topic can be very useful in planning writing assignments, in setting expectations for various students, and in providing pertinent in-process comments.

The influence of an individual's relevant knowledge on new learning is hardly a new concept. Research in the field of reading has reaffirmed, in systematic ways, Polanyi's (1958) early assertions that meaning is personal and context laden. Tacit knowledge focuses a reader's attention on the meanings of words, not on the words themselves. This notion of personal meaning has been particularly important in helping researchers identify specific ways in which meaning is constructed when individuals read through a text (Carey, Harste, and Smith, 1981; Goodman, 1973; Heath, 1980; Langer, in press). Similar questions now need to be directed towards writing; does familiarity with a topic lead, for example, to a clearer organization, to "smoother," more error-free style, or both?

Intuition and experience suggest that when students

write to a topic about which they know a great deal, the language, organization, and unity of their work are likely to be good; conversely, when students know little about a topic their language, organization, and coherence are likely to seem tight, restricted, and contrived -- or to fall apart altogether. When students have little knowledge or are unwilling to risk stating the ideas they do have, their writing may rely on glib generalizations, unsupported by argument or enriching illustrations. At other times when their knowledge is fragmentary, their writing may become little more than a list of vaguely associated items of information with few explicit connections among their ideas.

If this analysis is correct, we would expect that topic specific background knowledge would affect the general quality and local coherence of written work, and that analysis of student writing would show evidence of direct topic knowledge relationships. The studies reported here were designed to test these relationships.

THE STUDY

Two tenth grade American history teachers (Sal and Bobby) assisted in this investigation. They were both experienced teachers from a middle-class school district in the San Francisco Bay Area. Four classes (2/teacher) totalling 97 students were assigned 2 writing tasks at two points during the semester. Prior to data gathering, one researcher met with the teachers to discuss topics they were

planning for class study and to discuss key concepts related to each unit of study. Together they previewed the text, discussed the topic of study about to begin, and agreed upon three major concepts considered critical for student learning. The three concepts were used as a basis for a free association measure of topic-specific knowledge. Writing assignments to follow the free association activities were also discussed and the teachers devised prompts to stimulate writing about the concepts. This procedure was repeated later in the semester to permit analysis of the effects of topic-specific knowledge on school writing across two separate instructional sequences for each teacher.

Measuring Topic-Specific Knowledge

Sal's units of study were about "city and frontier" and "utopian societies" while Bobby's were about "American society in the 18th and 19th centuries" and "values in the 1920's." To assess students' knowledge of these topics, Langer's (1980, 1981, 1982, in press, in preparation) measure of topic-specific knowledge was administered just before each writing task. The measure elicits topic related knowledge using free association to key concept words from a unit of study. Free association responses to the key concept words are categorized according to the level of knowledge they represent (see figure 1). These categories progress from 1) a diffuse, personal response, to 2) a

concrete, functional response, to 3) an incorporation of abstract, superordinate principles. (For a complete description of the levels and how they were developed see Langer, 1981, 1982, in preparation.)

Writing Topics

This free association measure was used to assess the students' topic related background knowledge before each writing assignment was begun. The topics and stimulus words were:

Sal - 1. Write a paper comparing city and frontier life with regard to individualism and democracy.

(opportunity, democracy, individualism)

2. Write a one or two page essay on your version of a Utopian society, the kind you would like to live in.

(utopia, urban, rural)

Bobby - 1. It has been stated that in the 18th and 19th centuries the South was a deferential society. In one or two paragraphs, explain why this was true. In your answer, be sure to discuss the concepts of prejudice and acquiescence and how each related to this conclusion.

(deferential society, prejudice, acquiescence)

2. Some historians refer to the 1920's as a decade in American history when sexual freedom and the pursuit of happiness flourished. At the same time, it is noted that the 1920's were characterized by harsh moralistic and antiforeign sentiments. Explain how social changes during the 1920's influenced the growth of new values that conflicted with traditional ones. (3/4 to one full page)

(fundamentalism, Americanism, materialism)

In the attempt to permit topics, writing prompts, and instruction to continue as "typically" as possible, prompt specificity and topic complexity vary as they normally would in Sal's and Bobby's classes. Teacher and topic differences and varying "n"s are therefore addressed in the analyses.

Knowledge Measures

Standardized achievement scores for the California Test of Basic Skills were obtained for all students for whom they were available in school records.

For the prior knowledge measure, each teacher

presented the students with each of the three concept words just before giving out the writing assignment; students were asked to write everything that came to mind about those words. Two raters were trained to score the prior knowledge measures, following procedures outlined by Newell (1983). Three "knowledge" scores were derived for each student. One, a simple measure of total responses to the free association stimulus words, measures topic-specific fluency, or the amount of information available to the writer at the beginning of the task. The second, reflecting the highest level of response to each of the stimulus words, measures the extent of organization imposed upon the available information. The third measure combines aspects of both fluency and organization; it is based on the total number of responses that reflect either of the two more organized levels of knowledge. Analyses were based on average scores assigned by two independent raters. Reliabilities ranged from .98 for fluency to .81 for organization.

Writing Measures

Each student writing sample was scored on five separate measures: overall quality, coherence, syntactic complexity, audience, and function. As a measure of overall quality, each paper was scored holistically on a five point scale. Interrater agreement across two independent scorings was (r=.79). Some of the papers were also graded by the teacher;

when available these marks were included in our analyses as a second measure of overall quality.

Hasan's (1980) measure of interaction among cohesive chains was used to assess the coherence of each paper. This system of analysis distinguishes three kinds of lexical tokens: relevant, peripheral, and central. Relevant tokens are that subset of the total set of lexical tokens which are included within cohesive chains both within and between clauses; peripheral tokens are those tokens not included within cohesive chains; and central tokens are that subset of rlelvant tokens which occur in interaction across chains. Hasan states that central tokens contribute most to the coherence of text. The ratio of central to relevant tokens is then taken as the primary measure of text coherence. Thus, a more coherent text would not necessarily have more cohesive ties than a less coherent one, but would be expected to have more interaction among the cohesive chains.

To provide a measure of the overall syntactic complexity in each sample, the mean number of words/clause was also calculated.

Audience and function categories were analyzed to determine whether these aspects of informational writing tend to differ based upon student knowledge of the topic. Both measures were based on the analyses developed by Applebee (1981) for his study of Writing in the Secondary

School. The audience measure focussed on the relationship the writer perceives to exist between the writer and reader. Four categories are distinguished: 1) Personal writing that is directed toward the writer. This type of writing often takes the form of journals or diary entries.; 2) Writing to the teacher as part of an in-process instructional dialogue. Such writing assumes the teacher will respond with reactions or responses of some sort in dealing with the ideas expressed.; 3) Writing for teacher in the role of examiner. This type of writing is used to demonstrate acquisition of information which is generally assumed to be an index of "learning". The information needs to be conveyed to the teacher so that evaluation of knowledge can be determined and a mark assigned.; 4) Writing to a wider audience. This type of writing occurs when the writer has something to say that may be of interest to others. Such writing takes the form of writing to a specific person or group, or to a more generalized "unknown" audience such as the readership of a particular newspaper.

For the purpose of this study the following questions were posed with regard to audience: Do students who have less highly organized knowledge about the topic tend to write reports rather than analyses? Do they attempt to avoid or by-pass some of the "facts" by engaging in instructional dialogue with the teacher instead of writing

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to the teacher-as-examiner? All analyses of audience were based on ratings by two trained, independent raters, with a third rater used to reconcile disagreements (r=.97).

The analysis of writing functions distinguished between two of the informational writing categories developed by Applebee (1981). Informational writing focuses on information to be shared with others, and includes such forms of expository writing as reports, summaries, analyses, and theorizing (see figure 2). As with the audience ratings, all analyses were done by two independent raters, with a third for disagreements (r=.94).

FINDINGS

Knowledge and Writing

Pearson product moment correlations were used to examine general relationships among the writing and knowledge measures. Findings suggest that while the teacher's mark and our raters' holistic score are significantly correlated ($p < .01$), these are not related to the coherence and syntactic (words per clause) measures nor are they related to each other (see table 1).

Table 2 explores relationships among the three knowledge measures. The measures of fluency and organization are not significantly correlated with one another, although both are significantly related to the combined measure.

When the knowledge measures are correlated with the writing scores (table 3), the combined knowledge measure has the strongest relationship to the holistic score ($r = .30$, $p < .001$). The organization score relates significantly to overall quality as measured by both the holistic scores and teachers' marks. Fluency (the simple total of all responses) relates singificantly to the holistic scores but not to the teachers' marks. These findings suggest that when the responses reflecting more organized knowledge (levels 2 and 3) are combined, the relationship between the quality of background knowledge and holistic score as well as more highly organized background knowledge and teachers' marks becomes even greater.

Findings presented in table 3 also indicate a significant relationship between the combined background knowledge measure and Hasan's measure of coherence. None of the other relationships between the knowledge measures and the writing scores are signficant.

Relationships between achievement test scores and the writing measures are also displayed in table 3. As we would expect, reading and language achievement scores are significantly related to the holistic score of writing quality ($r = .34$ and $.43$, respectively) and to the teachers' marks ($r = .45$ and $.29$). The relationship between language

achievement and words per clause was also significant (r = .40). This may be because the standardized test tasks include many items testing syntactic knowledge at the sentence level.

To examine the extent to which relationships between prior knowledge scores and writing were simply a reflection of the effects of general academic achievement, partial correlations were calculated controlling for the reading and language subtest scores. This series of analyses reduced the size of the relationships only slightly (see table 4), although the reduction in degrees of freedom (caused by missing scores on the standardized tests) sharply reduced the levels of statistical significance. This pattern of results suggests that the effects of topic specific background knowledge are independent of, instead of overlapping with, the effects of general knowledge. These findings are similar to those reported by Langer (1982) in her work on the relationship between background knowledge and reading comprehension, where the effects of topic specific knowledge and general reading achievement were similarly independent.

Topic Differences

The analyses so far have looked at relationships across topics, ignoring any differences that might emerge from the

different tasks posed by the four assignments. Most school assignments specify not only the general content area to be discussed, but also the mode of argument or organization that is likely to be most appropriate in responding. Analysis of the four teacher-developed topics in the present study suggests that these assignments pose two different writing strategies as appropriate response patterns. The "City and Frontier" and "1920's" assignments prompt a compare and contrast organizational pattern, while the "Utopian Society" and "Deferential Society" assignments prompt more general thesis and support structures. In the latter, the general topic is provided by the teacher, and to respond appropriately the students must offer additional information elaborating that single concept, while in the former, they must integrate their ideas into the organizational framework prompted by the language of the assignment.

In our analyses, the type of argument required to respond appropriately to a prompt was a more influential factor than the amount of structure that seemed to be provided by the prompt itself. Although the "deferential" assignment appears to be more highly teacher structured than the "Utopian", the thesis-support prompts they hold in common can be seen in the examples of student writing that follow. The first example, written by Kim, is an example of

a paper that received a high holistic score and a high mark from the teacher.

UTOPIA

In the world right now there is much love and goodwill yet hardships like violence and hunger seem to overrule this goodwill. Leaders throughout the world have been trying to change these hardships to goodwill throughout out world's history. I think that in my Utopia I would like things to be as they were a while ago when our state was more rural. Instead of cities being the norm, they would be considered rarities. Instead of one tring to "get away from it all" into the country, one would be in the country. Trees would still be standing everywhere...but this right now is unrealistic. If one lets his imagination to run however, this kind of society could be reached. We could have people living on the moon which would lower the density of our world. If a society was set up in outerspace our world would not be so crowded. Many say that violence is caused because people feel crowded. In this way violence would be lowered. In my Utopia people would not be excited about crime, about violence like I just viewed in our society now. There would be no question of whether women or blacks or chicanos or Japanese Americans were "equal" to white men. No difference would even be noted; no person would even notice that someone had different color hair or different color skin. In my ideal society, people would accept people with their different beliefs. A communist country could live in harmony with a democratic country without a threat of a "war" breaking out. This is my ideal society; in general to have society with absolute constitutional values of equality, liberty, freedom and the pursuit of happiness!!!

Appearence wise, I would want no change to make it more man made, instead get closer to the basics.

Kim's paper received an "A" from her teacher and a holistic score of 7. Although there were many ideas she might have included in her presentation of an ideal society, and some of them might have been more important than others, the prompt does not require such differentiation. For this reason, a more "free-floating" associational response such a

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Kim's is acceptable. Elaborations are necessary, examples might be desireable, but not required, and a larger number of ideas rather than the sophistication or conceptual organization of the ideas appears appropriate.

Elio, on the other hand, has less information available with which to elaborate on the topic of the South as a deferential society than Kim had about her vision of a Utopian society.

> Well in the 18th and 19th centuries most slavery were in the South, because in the 18th and 19th centuries 99% of the white people thought they were superial because when they saw the blacks in Africa they seemed to live like animals. They brought them over to America to help them turn to (Chris) religion and (they)white man thought they were helping the black people.

Elio received a 2 out of possible 10 on this essay and a holistic score of 2. Although Elio's assignment appears to call for less personal "opinion" and knowledge than Kim's, both assignments essentially ask the students to "list" the facts they know to support a thesis presented in the assignment itself. Kim's higher score appears to be a function of the greater number of facts she inluded, not their organization.

In contrast, the "City and Frontier" and "1920's" assignments prompt a different type of passage structure: compare and contrast. Although these assignments differed

in length and in the amount of elaboration by the teacher, both provide a clue to the compare-contrast structure required for the student to write a more highly organized essay. Even if the essay (e.g. 1920's) points to specific ideas to be discussed, the students' ability to do so will depend on on how well they can organize related knowledge around the key contrasts.

Ram's 1920's paper is an example of a well organized, high scoring paper, with a teacher grade of 11/12 and a 10 holistic score.

> In the 1920's, many changes of values took place that were not part of the traditional view of life. Sexual freedom for example came about in this era. After the war, many individuals felt that they wanted to make America a better place by making social activities more prominent. They began to think about man as a person, and what he could get out of life. Instead of focusing on what man could do to improve society, people began to inquire upon what they could do to allow themselves more freedom and pleasure. A general feeling of "individual freedom" was going around, and among other things, sexual freedom was an issue. People felt that it was time to uncover the shame of sex. Even so, many people, especially the farmers in the 'traditionalist' country reacted negatively to this expanding idea. Also, people with strong religious beliefs about sex were often appalled.
>
> The pursuit of pleasure went along with many things - one being the concept of materialism - everyone wanted to make money and invest in stocks etc. Besides this, people generally wanted to be admired, to have money to partake in the pleasurable world they had just discovered...

Ram goes on to link the growing materialism with the stock market crash, and concludes his lengthy paper with a

prohibition to defend his point. Although Ram certainly knows a great deal about his topic, it is the interrelationships among ideas, the high level of organized knowledge, that makes his response not only a good one, but particularly appropriate to the assignment.

Julia's paper about city and frontier life is an example of a lower rated paper, with a holistic score of 6.

> I think the city provided more opportunity for people because it provided jobs for the poor and rich people. The cities were on the coast near harbors so they could commerce with other countries. The city provided more Democracy because the people were closer together, more people lived in cities rather than on farms. Therefore the majority (the city people) would probably get what they wanted. I think the city provided more individualism too because in the cities there were more jobs and different types of jobs. People could do what they wanted - on farms their was mainly one job: working in the fields and around the house. More opportunity was provided for city people.

Julia's paper provides an interesting contrast to Ram's in that although Julia seems to have a moderate amount of information that is relevant to her topic (fluency), she uses her paper to "list" her ideas instead of linking them in a comparison-contrast structure. The organizational framework she uses is one that is more appropriate for the thesis-support prompts than the one she was actually given. In her case, simple amount of knowledge is insufficient; a higher level organization of knowledge is called for.

These examples suggest that across assignments,

background knowledge may be useful in different ways. Sometimes frequency and sometimes power mattered. When the assignment prompted integrated knowledge, then high level organized information was appropriate. When the prompt was more general and called for examples and elaborations, fluency, a good deal of less organized knowledge, mattered more. These interpretations would lead us to expect quite different patterns of relationships between writing quality and background knowledge for the two types of topics; table 5 summarizes the relevant data.

In general, the statistical results support the impressions drawn from examining student papers. For the two topics that required compare-and-contrast essays, the measure of organization of background knowledge was strongly related to essay quality. For the two topics requiring details to elaborate upon a thesis statement, the amount of information available (reflected in the fluency score) was important but the organization of that information was not.

The interesting implication from these findings is that different assignments, given for different purposes, require different kinds of knowledge. A low score on a particular paper might not mean that a student "does not know the information" but may have had available differently organized knowledge--knowledge that might have been useful

had the prompt been presented in a different form.

Audience and Function

A final analysis examined the extent to which students' choice of audience and function in their writing was related to the level of knowledge they brought to the task. The relevant analyses of variance are summarized in tables 6 and 7.

Looking first at audience, student writing samples fell into only two of our categories: instructional dialogue and teacher as examiner. Students who cast their writing as part of an instructional dialogue with the teacher had significantly higher scores for overall fluency than did those who addressed their papers to the teacher as examiner (table 6). Mean scores for the combined measure of background knowledge, on the other hand, were somewhat higher for the papers addressed to the teacher as examiner ($p < .12$); so were the holistic scores of the writing that resulted ($p < .13$).

The fluency measure is based on all information the student cites as relevant, while the combined measure is limited to information that reflects organized information. This suggests that the students who wrote to the teacher as examiner limited themselves to information that they were able to organize and focus around the topic, while those who wrote as part of a teacher-learner dialogue were made less

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of a distinction between what was relevant to the topic.

Table 7 summarizes the results of a similar analysis of differences between function categories. Here the contrast is between the majority of students who responded with analytic essays, and a much smaller proportion who relied instead upon summary. In general, it seems that the students who wrote analytic papers had more relevant knowledge available as they began the task (as reflected in the combined score for background knowledge), and obtained a significantly higher ($p < .04$) holistic writing quality score as a result.

CONCLUSIONS

The analyses reported in this paper had number of purposes: 1) to examine the relationships between topic knowledge and informational writing, 2) to determine ways the focus of an assignment interacts with topic knowledge to affect the written work, and 3) to identify aspects of student writing that might be instructionally informative for the teacher.

Not surprisingly, the data clearly suggest a strong and consistant relationship between topic specific background knowledge and the quality of student writing. More interesting, however, is the evidence that different kinds of knowledge are predictive of success in different writing

tasks. When the assignment calls for a simple reiteration of facts, or elaborations of a given idea, a large amount of unintegrated (or loosely linked) information will suffice. However, when the student is required to present a thesis, analyze, and defend it, the amount of highly organized knowledge, as opposed to simple fluency, will determine success. These knowledge measures are not related to each other, and each type of knowledge must be judged separately.

These findings suggest some interesting directions for instructional research. At the present time, teachers do not seem to distinguish among the complexities of the tasks they assign. Most assignment seem to be concerned with assessment of whether the students "know it or not" rather than with the differing levels of knowledge their students may have. The findings from these analyses suggest that because different assignments tap different kinds of knowledge, assignments can become a helpful device in exploring the "separate facts" versus "integrated knowledge" the students have acquired. Such use of student writing to analyze the complexity of content knowledge is a direction worth pursuing in further work.

The findings reported here also have many implications for more informed and instructionally useful writing conferences. As a rule, when teachers conduct writing conferences with their students, comments about

background knowledge are frequently inseparable from those about organization and surface presentation, although superficial and poorly organized knowledge bases may be largely responsible for other writing problems.

The analyses of interactions between background knowledge and audience and function categories, though exploratory, suggest that when students have only fragmentary knowledge about a topic, they use tactics to avoid engaging in writing activities that require them to "say more than they know." They may resort to writing summaries when analysis would have been more appropriate because the summary format permits them to recount the "facts" without having to interrelate them more fully. Rather than indicating that students lack knowledge of the proper form for analytic writing, papers of this sort may indicate that they lack enough knowledge of the topic to present it in the form requested. In such a case, practice in writing an analytic paper will not be helpful; additional content learning may be.

Another "coping" tactic identified in the analyses concerns the students' use of instructional dialogue when this type of writing is not called for. The data suggest that when students engage in unprovoked instructional dialogue, where they list the facts and avoid integration of ideas in the form required by the assignment, it may again be because they lack sufficient knowledge of the topic to

deal with it more formally. In many cases this may prove to be an effective coping strategy, one which the teacher could put to good instructional use. The student's "message" at this point may simply be that a teaching/learning dialogue is necessary, rather than an evaluation of completed learning. With student writing of this sort, the teacher who focuses on organization of the paper will hardly be using the writing conference to help the student write a better paper.

The findings reported in this paper both parallel and complicate those found by Langer (1980, 1981, in preparation) in her work on the relationship between background knowledge and comprehension of expository text. This body of work found that background knowledge was highly related to the comprehension and recall of a passage, and that the text-specific knowledge measure predicted comprehension independently of either reading achievement or IQ scores. It also found that the level of organization of background knowledge was a better predictor of comprehension success than was a fluency measure (based solely on frequency of responses).

In the context of the present study, these findings suggest the possibility that highly organized information may be more <u>consistently</u> helpful in the evocation of a range of meanings for the reader than for the writer. For some

tasks, writers may need the same kinds of highly organized information that readers do, but for others they may also require an abundance of loosely related informational "bits" for use in their writing. This distinction may arise from differences inherent in each of the two activities; writers often need not only to generate, present, and relate intracately linked ideas, but also need a large body of loosely associated information that can be used to elaborate, embellish, and enliven the presentation. Further research is certainly needed to explore such questions and to allow us to describe the kinds of knowledge demands inherent in the reading and writing of a variety of text types for a variety of purposes.

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Figure 1: The Organization of Topic Specific Knowledge

1. MUCH -- (Highly Organized)

superordinate concepts - higher class category

e.g., fascism - "one of the various forms of political rule..."

definitions - precise meaning

e.g., dictator - "a ruler with absolute authority over the government of a people"

analogies - substitution or comparison for a literal concept or expression

e.g., court - "court is the scale that weighs your destiny"

linking - connecting one concept with another

e.g., congress - "congress is like parliament in that both..."

2. SOME - (Partially Organized)

examples - equal class, but more specific

e.g. government - "dictatorship"

attributes - subordinate to larger concept

e.g., court - "trust in the judgment of others"

defining characteristics - defines a major aspect of the concept

e.g., government - "makes laws"

3. LITTLE - (Diffusely Organized)

associations - tangential cognitive links

e.g., congress - "important people"

morphemes - smallest units of meaning such as prefixes, suffixes, and root words

e.g., binary - "bicycle"

sound alikes - similar phonemic units

e.g., gerrymander - "salamander"

first hand experiences - tangential responses based on recent exposure

e.g., Iran - "news on television"

no apparent knowledge

Writing without composing (mechanical uses of writing)

- Multiple-choice exercises.
- Fill-in-the-blank exercises (answered with less than a sentence).
- Short-answer exercises (brief, one or two sentences per question).
- Math calculations.
- Transcription from written material (copying).
- Transcription from oral sources (dictation).
- Translation.
- Other mechanical uses.

Informational uses of writing

- Note-taking.
- Record, of on-going experience. (This is what is happening.)
- Report. Retrospective account of particular events or series of events. (This is what happened.)
- Summary. Generalized narrative or description of a recurrent pattern of events or steps in a procedure. (This is what happens; this is the way it is done.)
- Analysis. Generalization and classification related to a situation, problem, or theme, with logical or hierarchical relationships among generalizations implicit or explicit.
- Theory. Building and defending at a theoretical level, including implicit or explicit recognition that there are alternative perspectives. Hypotheses and deductions from them.
- Persuasive or regulative uses of writing. (Any instances in which the attempt to convince overrides other functions or in which rules are given and compliance assumed.)
- Other informational uses.

Personal uses of writing

- Journal or diary writing, for own use.
- Personal letters or notes, where main purpose is "keeping in touch."
- Other personal uses.

Imaginative uses of writing

- Stories.
- Poems.
- Play scripts.
- Other imaginative uses.

Any other uses of writing

Figure 2: Uses of School Writing

Table 6 Relationships between Background Knowledge, Audience, and Writing Quality

	Means Audience Categories			
	Dialogue	Examiner	F-Statistic	Significance
Knowledge Measures				
Fluency	14.18(57)	10.72(86)	6.92	.009
Organization	2.05(57)	1.98(86)	1.10	.30
Combined	6.02	7.31(86)	2.44	.12
Writing Measure				
Holistic	5.93(57)	6.30(86)	2.38	.13

Table 1 Relationships Among Writing Measures

	Holistic	Teacher's Mark	Cohesion	Words/ Clause
Holistic Score		.44** (57)	.06 (99)	.25 (96)
Teacher's Mark			.27 (22)	-.15 (20)
Cohesion				-.10
Words/Clause				

**p<.01

Table 2 Relationships Among Knowledge Measures

Correlations (n in parentheses)

	Fluency	Organization	Combined
Fluency		.15 (193)	.66*** (193)
Organization			.37*** (193)
Combined			

***p<.001

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Table 3 Relationships between Background Knowledge and Measures of Writing Quality and Cohesion

Writing Measures:	Holistic Score	Teacher's Mark	Cohesion	Words/ Clause
Knowledge Measures				
Fluency	.20** (144)	.04 (59)	.06 (99)	.09 (96)
Organization	.26*** (144)	.34** (59)	.02 (99)	.09 (96)
Combined	.30*** (144)	.16 (59)	.20* (99)	.10 (96)
Reading Achievement	.43*** (89)	.45* (35)	-.03 (56)	.21 (54)
Language Achievement	.34*** (89)	.29* (35)	-.12 (56)	.40*** (54)

*p<.05, **p<.01, ***p<.001

Table 4 Partial Correlations Controlling for Reading and Language Test Scores

	Writing Measures			
	Holistic Score	Teacher's Mark	Cohesion	Words/ Clause
Knowledge Measures				
Fluency	.15	-.01	.09	.004
Organization	.17	.26	.007	.10
Combined	.25**	.09	.22*	.04
	84	31	52	50

*p<.05, **p<.01

Table 5. Within-Topic Relationships between Background Knowledge and the Quality of Writing

	Holistic Scores by Topic			
	City & Frontier	Utopian Society	Defer-ential Society	1920s Values
Knowledge Measures				
Fluency	0.3	.26*	.33*	.15
Organization	.39***	.02	.04	.68**
Combined	.42***	.27	.34	.31
N	59	39	27	19

*p<.05, **p<.01, ***p<.001

Table 6 Relationships between Background Knowledge, Audience, and Writing Quality

	Means Audience Categories			
	Dialogue	Examiner	F-Statistic	Significance
Knowledge Measures				
Fluency	14.18(57)	10.72(86)	6.92	.009
Organization	2.05(57)	1.98(86)	1.10	.30
Combined	6.02	7.31(86)	2.44	.12
Writing Measure				
Holistic	5.93(57)	6.30(86)	2.38	.13

Table 7 Relationships between Background Knowledge, Function, and Writing Quality

	Means Function Categories			
	Summary	Analysis	F-Statistic	Significance
Knowledge Measures				
Fluency	11.47(19)	12.2?(123)	0.15	.70
Organization	2.03(19)	2.0?(123)	0.05	.82
Combined	4.63	7.1?	4.60	.03
Writing Measure				
Holistic	5.53	6.2?	4.37	.04

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